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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,906	06/21/2001	Tae-Ho Yoon	05823.0204	4767
22852	7590	08/10/2004	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005			TSOY, ELENA	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/884,906

Applicant(s)

YOON ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

1. Amendment filed on July 1, 2004 has been entered. Claims 1, 2, 5-14 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 5, 6, 9** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Garrett (US 6,437,026) in view of Ueno et al (US 4,606,930) and Gaku et al (US 4,904,760) for the reasons of record as set forth in Paragraph No. 6 of the Office Action mailed on April 1, 2004.
4. **Claims 2, 10, 11, 14** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Garrett (US 6,437,026) in view of Ueno et al (US 4,606,930) and Gaku et al (US 4,904,760), further in view of Nakayama et al (US 4,619,861) for the reasons of record as set forth in Paragraph No. 7 of the Office Action mailed on April 1, 2004.
5. **Claims 7, 8** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Garrett (US 6,437,026) in view of Ueno et al (US 4,606,930) and Gaku et al (US 4,904,760), further in view of Emler et al (US 4,690,107) for the reasons of record as set forth in Paragraph No. 8 of the Office Action mailed on April 1, 2004.
6. **Claims 12, 13** stand rejected under 35 U.S.C. 103(a) as being unpatentable over Garrett (US 6,437,026) in view of Ueno et al (US 4,606,930) and Gaku et al (US 4,904,760), further in view of Nakayama et al (US 4,619,861), and further in view of Emler et al (US 4,690,107) for

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the reasons of record as set forth in Paragraph No. 9 of the Office Action mailed on April 1, 2004.

Response to Arguments

7. Applicants' arguments filed July 1, 2004 have been fully considered but they are not persuasive.

Applicants argue that Ueno et al is directed to a method of modifying polyester fibers not glass fibers.

The Examiner respectfully disagrees with this argument. Ueno et al teach that their invention relates to a method for treating fibers to obtain treated fibers suitable as a reinforcing material which exhibit an excellent adhesion to matrices to be reinforced and can give a satisfactory strength to the resulting composite material. Fibrous materials which are known as a reinforcing material suitable to be used in composite materials include glass fibers, carbon fibers, alumina fibers, steel fibers and aramid fibers. It has recently been revealed, that some kinds of polyesters that show anisotropy in the molten state are expected to be suitable as a reinforcing material used in forming composite material. However, it turned out that the adhesion at the interface between the polyester fiber and the resin matrix in the composite material is not sufficiently good. Ueno et al further teach that the plasma treatment in the presence of e.g. pyrrole provides the reinforcing polyester fibers material with *excellent* adhesion to matrices (See column 1, lines 38-42) by introducing functional groups onto the surface of the fiber or increase the ruggedness of the surface (See column 2, lines 59-61).

In other words, Ueno et al teach that the plasma treatment in the presence of e.g. pyrrole, allows even polyester fibers not having sufficiently good adhesion at the interface between the fiber and a resin matrix to achieve excellent adhesion to matrices since the plasma treatment

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introduces functional groups onto the surface of the fiber or increase the ruggedness of the surface of the fiber.

Clearly, one of ordinary skill in the art at would easily understand that the plasma treatment in the presence of e.g. pyrrole, would allow *any* fiber including known reinforcing glass fibers, carbon fibers, alumina fibers, steel fibers, aramid fibers, to achieve the *same excellent* adhesion to matrices since the plasma treatment in the presence of e.g. pyrrole, would introduce functional groups onto the surface or increase the ruggedness of the surface no matter what fiber is treated because the fiber itself is not involved in forming functional groups onto the surface of the fiber or increase the ruggedness of the surface.

Therefore, one of ordinary skill in the art at would have been motivated to use a method of Ueno et al to treat any reinforcing fibers including glass fibers with the expectation of providing the desired *excellent* adhesion to matrices, as taught by Ueno et al.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elena Tsoy
Primary Examiner
Art Unit 1762

August 6, 2004